

2879

7
7-17-03
J. Carter



03560.002791.

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
: Examiner: H.R. Harper
KEISHI DANJO ET AL.)
: Group Art Unit: 2879
Application No.: 09/846,555)
: Filed: April 30, 2001)
: For: SUBSTRATE FOR FORMING AN)
: ELECTRON SOURCE, ELECTRON:)
: SOURCE, AND IMAGE)
: DISPLAY DEVICE : July 7, 2003

RECEIVED
JUL 14 2003
TECHNOLOGY CENTER 2800

Mail Stop Non Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR RECONSIDERATION

Sir:

In response to the Office Action (Paper No. 6) of April 7, 2003, Applicants respectfully request reconsideration in view of the following remarks.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 7, 2003.

(Date of Deposit)

FRANK A. DeLUCIA, JR. (Reg. #42,476)

(Name of Attorney for Applicant)

Signature

July 7, 2003

Date of Signature

Claims 1-34 are pending in this application, of which Claims 1, 3, 5, 6, 11, 12, 13, 14, 18, 20, 22 and 23 are independent.

Claims 1 and 2 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,087,770 (Kaneko et al.). Claims 3 and 28-34 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,184,610 (Shibata et al.). Claims 4-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al. in view of U.S. Patent US RE37,183 E (Kawamura et al.). Claims 11, 18, and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaneko et al. in view of U.S. Patent 6,465,954 B2 (Kerslick et al.). Claims 12 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al. in view of Kerslick et al. Claims 13-17 and 21-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al. in view of Kawamura et al. and Kerslick et al.

An aspect of the present invention to which the independent claims relate is a precursor to an electron source. The precursor is a member which, when formed, is employed to support a separate electron emitting element. When the precursor and electron emitting element are coupled to each other, they collectively form the electron source.

Also in accordance with an aspect of this invention, a layer, such as a charging prevention layer or a Na blocking layer, is not provided at a surface region (of the substrate) that is to be connected to an image display member, or at a surface region (of the substrate) on which a getter is to be provided. By virtue of these features, as described in paragraphs [0061] and [0062] in the specification, air leakage is prevented from occurring

at the point of connection to the image display member, and the possibility of a short-circuit occurring between adjacent wires due to the getter is prevented or at least substantially minimized.

Independent Claims 1, 3, 5, 6, 18, 20, 22, 23 each recite a precursor to an electron source, the electron source for being coupled to an image display member to form an image display apparatus, the image display member for displaying an image in response to being irradiated by electrons. The precursor comprises a substrate and a film having features as recited in those respective independent claims.

Independent Claims 11-14 each recite a precursor to an electron source, wherein the precursor comprises a substrate and a film having features as recited in those respective independent claims.

Kaneko et al., which is assigned in common with the present application, refers to members 2 and 3 (shown in Fig. 3) that form an electron emitting element itself. Col. 10, lines 1-9 refers to a substrate 1, electrodes 5 and 6, a thin film 2 for forming an electron emission portion, an electron emission portion 3, a thin film 4 that includes the portion 3, an insulating layer 9, and an upper wiring 10. Col 10, lines 18-26 refers to an electron emission portion 3 formed between, and partly on, electrodes 5 and 6. The thickness of the film 4 is determined as needed by step coverage of the electrodes 5 and 6, resistances of the electron emission portion 3 and the electrodes 5 and 6, the diameter of conductive particles of the portion 3, etc. While the elements 2 and 3 form an electron-emitting element itself, they do not form part of a precursor to an electron source as in the

present invention. Indeed, nothing in Kaneko et al. would teach or suggest a *precursor* to an electron source, the electron source being coupled to an image display member to form an image display apparatus, the image display member for displaying an image in response to being irradiated by electrons, wherein the *precursor* comprises a substrate and an antistatic film as defined in Claim 1. As such, Claim 1 is deemed clearly patentable over Kaneko et al.

Moreover, for substantially the reasons as those set forth above, neither would anything in Kaneko et al. teach or suggest a *precursor* to an electron source, wherein the precursor comprises a substrate and an antistatic film having features as recited in Claims 11 and 18.

Shibata et al. refers to a member on which an electron emitting element is formed, having a SiO₂ layer. Col. 20, lines 36-39, relied on in the Office Action, refers to an interlayer insulation layer (not shown) typically made of SiO₂, and formed on an entire surface or part of the surface of the insulating substrate 1 to show a desired contour by means of vacuum deposition, printing, or sputtering. For example, it may be formed on the entire surface or part of the surface of the substrate 1 on which the X-directional wires 102 have been formed.

While Shibata et al. may refer to the SiO₂ formed on an entire surface or part of the surface of the insulating substrate 1 to show a desired contour, nothing in that reference would teach or suggest a precursor to an electron source, wherein the precursor comprises a substrate and a sodium blocking film provided on a surface of a substrate at a

region where electron-emitting devices are to be disposed on the precursor, to form an electron source, *but not on a region of that surface which is to be coupled to the image display member*, as recited in Claim 3. As such, Claim 3 is deemed clearly patentable over Shibata et al.

For substantially the same reasons, Applicants respectfully submit that nothing in Shibata et al. would teach or suggest a film containing a metal oxide provided on a surface of a substrate at a region where electron-emitting devices are to be disposed on the precursor to form an electron source, *but not on a region of that surface which is to be coupled to the image display member*, as recited in Claims 5 and 6. Neither would anything in Shibata et al. teach or suggest a sodium blocking film provided on a surface of a substrate at a region where electron-emitting devices are to be disposed on the precursor, to form an electron source, *but not on a region of that surface where a getter film is to be disposed*, as recited in Claim 12, a film containing a metal oxide provided on a surface of a substrate at a region where electron-emitting devices are to be disposed on the precursor to form an electron source, *but not on a region of that surface where a getter film is to be disposed to form the electron source*, as recited in Claims 13 and 14, or a precursor comprising a sodium blocking film, an insulating film, or an SiO₂ film having the specific features as recited in Claims 20, 22, and 23, respectively.

Kawamura et al. is cited in the Office Action as teaching that “electroconductive metal oxide particles of tin, antimony, or indium . . . are included in the SiO₂ layer to improve the strength of the film . . . [, t]his film can act as an anti-static,

sodium blocking, and insulating film.” However, nothing in that reference would teach or suggest the above-emphasized features of Claims 5, 6, 13, 14, 22, and 23.

Kerslick et al. is cited in the Office Action as teaching merely “that the getter material can be used to form the cathode . . . of a field emission device . . .”, but nothing has been found, or pointed out, in that reference which would teach or suggest the above-emphasized features of Claims 11-14, 18, 20, 22, and 23.

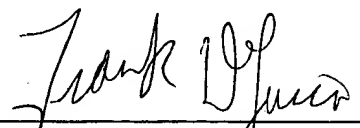
For the foregoing reasons, it is respectfully submitted that (a) Claims 5 and 6 are each clearly patentable over Shibata et al. and Kawamura et al., (b) Claims 11 and 18 are each clearly patentable over Kaneko et al. and Kerslick et al., (c) Claims 12 and 20 are each clearly patentable over Shibata et al. and Kerslick et al., and (d) Claims 13, 14, 22, and 23 are each clearly patentable over Shibata et al., Kawamura et al., and Kerslick et al., whether those references are considered separately or in those respective combinations.

The other claims in this application are each dependent from one or another of the independent claims discussed above, and also are believed clearly patentable over the relevant art relied on by the Examiner for the same reasons as are those independent claims. Nonetheless, individual reconsideration of each dependent claim on its own merits is respectfully requested.

In view of the foregoing remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



Attorney for Applicants
Registration No. 42,476

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

NY_MAIN 361013v1